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E8x and E9x Model Year Updates

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E8x and E9x Model Year Updates

**Models: E89 Z4 sDrive35is, E92/E93 335i,
E92/E93 335is and E82/E88 135i**

Production: starting Spring of 2010

OBJECTIVES

After completion of this module you will be able to:

- Identify the features of the E89 BMW Z4 sDrive35is, the E92/E93 LCI and E92/E93 335is.
- Describe the new body styling changes on the E89 BMW Z4 sDrive35is, the E92/E93 LCI and E92/E93 335is.
- Understand the powertrain changes for the MY 2011.

E89 BMW Z4 sDrive35is

Since its launch in May 2009 the BMW Z4 can look back on very successful sales figures. With over 18300 cars sold from May to November 2009, world wide, BMW has been able to sell almost twice as many units of the two-seater Roadster as the competition.

Combining classic proportions with modern features, the BMW Z4 Roadster enjoys the top spot in its class. The best selling Roadster is now getting a high-performance upgrade.

The BMW Z4 sDrive35is with the N54B30T0 engine delivers performance figures comparable to that of the Audi TT RS or Mercedes SLK 55 AMG. The Z4 offers significantly lower fuel consumption and CO2 emissions figures thanks to the use of BMW Efficient Dynamics.

Furthermore, the range of optional extras is extended to include an attractive M Sports package, which is optionally available for all BMW Z4 engine versions.

The most important technical data in comparison with the competition:

		BMW Z4 sDrive35is	Audi TT RS Roadster	Mercedes-Benz SLK 55 AMG
Engine	Design/cylinders	In-line/6 N54B30T0	In-line/5	V/8
Displacement	[cm ³]	2979	2480	5439
Power output	hp(rpm)	335 (5900)	340 (5400-6500)	360 (5750)
Torque	[Nm/rpm]	450+50**/1500 500 with overboost	450/1600-5300	510/4000
0-100 km/h/62mph	[s]	4.8	4.7	4.9
Top speed	mph	155*	155*	155*
Consumption	[l/100 km]	9.0	9.5	12.0
CO2	[g/km]	210	221	288
Length/Width/Height	[mm]	4244/1790/1284	4198/1842/1348	4103/1777/1296
Wheelbase	[mm]	2496	2468	2430
Curb weight	[kg]	1600	1585	1575
Luggage compartment capacity	[l]	180-310	250	208-300

* Electronically governed. **Overboost function

The 2011 BMW Z4 sDrive35is debuted at the Detroit Auto Show (January 2010). The US market launch of these vehicles was scheduled for March 2010 to coincide with the beginning of the open-air (convertible) season.

The Z4 sDrive35is is the latest among a long line of previous BMW vehicle to sport the “s” to signify a higher level of sport orientation. BMW began including the “s” denomination in models like the E21 320is in the early 1980’s to denote a sport package or sport edition vehicle. The 3 Series, 5 Series, and X5 have all had the “s” incorporated into their badges at some point in history.



The latest Z4 model is characterized by instantaneous response to the accelerator pedal, fantastic sound, and a free-revving spirit. The engine features increased air intake flow and increased boost pressure to release more power with the same standard of efficiency.

The BMW Z4 sDrive35is includes new M Sport upgrades such as M Aerodynamics and adaptive M Suspension. The adaptive M Suspension combines a ride-height reduction of 10 millimeters (almost 0.4”) with electronically controlled shock absorbers (Dynamic Damping Control) to improve the vehicle’s agility without compromising ride comfort. The M Sport upgrades emphasize the Z4’s athletic character through aerodynamically optimized exterior features and customized interior components.

Electric Power Steering (EPS) on the BMW Z4 sDrive35is features very sporty programming, focused to provide intense and clear steering feedback to the driver. This enables the driver to turn-in with remarkable precision and confidence at all vehicle speeds.

Powertrain

The N54B30T0 engine features increased air intake flow and increased boost pressure to release more power with the same standard of efficiency. The combination of twin low-mass turbochargers and high precision direct injection offers an output comparable to that of larger displacement engines.



View of the Z4 sDrive35is engine compartment with N54B30T0 engine

The engine of the new BMW Z4 sDrive35is maintains a high output throughout the entire engine speed range. Nominal peak torque is increased to 332 lb-ft from 1,500 rpm to 4,500 rpm and the maximum power output of 335 hp is delivered at 5,900 rpm. This is a significant increase compare to the standard N54B3000 engine used in Z4 sDrive35i model.

	Unit	N54B30T0 in Z4 sDrive35is
Design/Cylinders/Valves		In-line/6/4
Displacement	[cm ³]	2979
Bore/Stroke	[mm]	84.0/89.6
Power output at engine speed	SAE hp (rpm)	335 (5900)
Torque at engine speed	lb ft (rpm)	332 (1500)
Compression ratio	[ε]	10.2
Digital Motor Electronics		MSD81
Acceleration 0-62	mph	4.8

The enhanced engine management system of the BMW Z4 sDrive35is also includes an electronically-controlled overboost function to briefly increase torque under full load by another 37 lb-ft. This temporary torque peak of 500 Nm/369 lb-ft gives the car a significant increase in acceleration.



The BMW Z4 sDrive35is will complete the sprint from a standstill to 100km/h/62 mph in just 4.8 seconds. Top speed of the BMW Z4 sDrive35is is limited electronically to 250 km/h/155 mph.

The exhaust system of the BMW Z4 sDrive35is has been tuned specifically for this model. Acoustic engineering gives the car a very unique sound pattern across the speed range. This tuned sound is the result of special baffles and a unique set of mufflers. The sound is characterized by a deep rumble with a focus on the low frequency sound range.

Note: The N54B30T0 engine with 335hp is used in the top model of the E89 (BMW Z4 sDrive35is) and in the BMW 335is. The 335is also has an 369 lb-ft overboost function but has 320hp.

Double-clutch Transmission

The standard equipment 7 speed double-clutch transmission makes a significant contribution to the performance of the BMW Z4 sDrive35is. In addition to automatic mode the driver can change gears manually with the electronic gear selector or gearshift paddles on the steering wheel. Fast and smooth gear changes without an interruption in traction contribute to the low fuel consumption and emission figures.



BMW Z4 sDrive35is steering wheel with gearshift paddles and DCT gear selector

The following features refer to the DCT transmission:

- A stronger dual-mass flywheel was specially designed for the increased power output.
- DCT Automatic mode was adapted to the engine's output characteristics and superior performance.
- Specially modified shift points in conjunction with the Sport and Sport+ modes of Dynamic Driving Control provide an especially dynamic driving experience.
- As a special feature of the DCT, the "Launch Control" function is available for optimum acceleration from a standstill.

Note: For more information regarding the "Launch Control" feature of the DCT refer to the vehicle owner's manual.

Exclusive Features



Front/side: Left - M Aerodynamics package BMW Z4 sDrive35is; Right - other BMW Z4 models



Rear: Left - M Aerodynamics package BMW Z4 sDrive35is; Right - other BMW Z4 models

The BMW Z4 sDrive35is comes standard with an M Sports Package including the M Aerodynamic kit and adaptive M Suspension featuring electronically controlled dampers that can be adjusted between Sport and Comfort settings.

New five spoke design light weight 18-inch rims are mounted on mixed size tires front to rear, with 19-inch rims available as an option.

The adaptive M Suspension lowers the vehicle 10 millimeters to enhance handling and steering precision. The electronic damper control (EDC) has been especially adapted to the suspension changes to ensure vehicle stability in all driving conditions.

The M Sports Package for the BMW Z4 sDrive35is with modified front and rear aprons, rear diffuser; door mirrors (always in oxide silver) evokes the dynamic character of the vehicle through its aerodynamic exterior features and customized interior design.

Note: An M Sports package is also available as an optional extra for all other BMW Z4 models.

Inside the BMW Z4 sDrive35is, the driving experience is enhanced by features such as a new thick-rimmed M leather steering wheel with gearshift paddles (for the 7-speed DTC sports automatic), an M driver's footrest, and sport seats. Grey-faced instrument dials feature the "sDrive35is" model designation.



BMW Z4 sDrive35is features

Further features inside the Z4 sDrive35is are the Anthracite-colored BMW Individual roof lining, M door sill strips, floor mats with colored piping and the "sDrive35is" model designation, as well as M interior trim in Aluminum Carbon.



E92/E93 LCI 3 Series

The new BMW 2011 3 Series Coupe and Convertible LCI, include outstanding style updates for 328i and 335i models with a new engine for 335i. The 2011 3 Series Coupe and Convertible models went on sale in the US market in the spring of 2010.



Each car's essential attributes of rear-wheel drive (xDrive is only available on the Coupe), near-perfect 50-50 weight distribution, remarkably precise steering, and skillfully engineered suspension are fundamentally unchanged.

All-new is the N55 engine for the 335i model. This turbocharged, all-aluminum engine features essentially the same "short block" and 3.0-liter displacement of its predecessor (N54), but benefits from five additional years worth of development and refinement. This is the first BMW engine to combine direct injection, single twin scroll turbocharger, double VANOS and Valvetronic system (Valvetronic III). The result is an engine that is more responsive, more fuel efficient and cleaner-running than its outstanding predecessor, but still maintains the same 300 horsepower and 300 lb-ft of torque with a 7,000 rpm redline.

The combination of lines flowing into one another elegantly emphasizes the vehicles' performance potential. The shoulder line rises slightly but consistently from front to rear. The character line flows in a long, stretched arch all the way from the front fender to the new taillights. As the sill line was moved up slightly to the rear in a slow and gentle curve. The fender flare around each rear wheel also serves to give the character line extra tension in both an upward and outward direction.

Attractive new innovations at the front, side, and rear - integrated precisely into the overall look of the car- give greater emphasis to the sportiness of both models. At the same time, these modifications slightly extend the overhangs front and rear (now 1.14" and 0.12" longer, respectively), which adds a sleeker and even more athletic appearance.

New Body Styling

Distinct features at the front of the vehicle:

- The new hood and front fascia project elegance.
- Distinctive new headlights with LED Corona Rings (daytime running lights), LED turn signals and “Eyebrow” with LED accent..
- Larger, reshaped exterior mirrors with enhanced aerodynamics.



Distinct features at the rear of the vehicle:

- A new rear fascia that emphasizes the wide stance of the vehicle.
- New side skirt design underlines the sporty line of the Coupe and Convertible.
- Distinctive new taillights with two LED lit tubes, LED turn signals, and LED brake lights.
- Reshaped rocker covers perfectly tie in with the rear fascia.



Exterior Lighting

The LCI headlights and rear lights have a new interior design. The headlights feature LEDs in the corona rings for daytime/driving light function and in the turn signal indicators as standard.



E92/E93 comparison: Predecessor at left, SA 5AK LED light elements at right and top

The rear lights have two LED lit tube elements, LED turn signals and brake light as standard equipment.



92/E93 comparison: Predecessor at left, LCI rear lights in LED technology at right and top

Powertrain

Engines (E8x/E9x 35i)

The N55B30M0 engine replaces the N54B3000 engine in the E9x 335i model and in the E82/E88 135i. The E89 BMW Z4 sDrive35i will continue to be offered with the N54B3000.

Comparison of the N54 with the N55 engine

	Unit	N54B3000	N55B30M0
Design/Cylinders/Valves		In-line/6/4	In-line/6/4
Displacement	[cm ³]	2979	2979
Bore/Stroke	[mm]	84.0/89.6	84.0/89.6
Power output at engine speed	hp [rpm]	300 5800	300 5800
Power output per liter	[kW/l]	75.5	75.5
Torque at engine speed	lb ft (rpm)	300 1300–5000	300 (1200–5000)
Compression ratio	[ε]	10.2	10.2
Valves per cylinder		4	4
Digital Motor Electronics		MSD81	MEVD17.2
Exhaust emissions legislation		ULEV (E89 Z4 ULEV II)	ULEV II

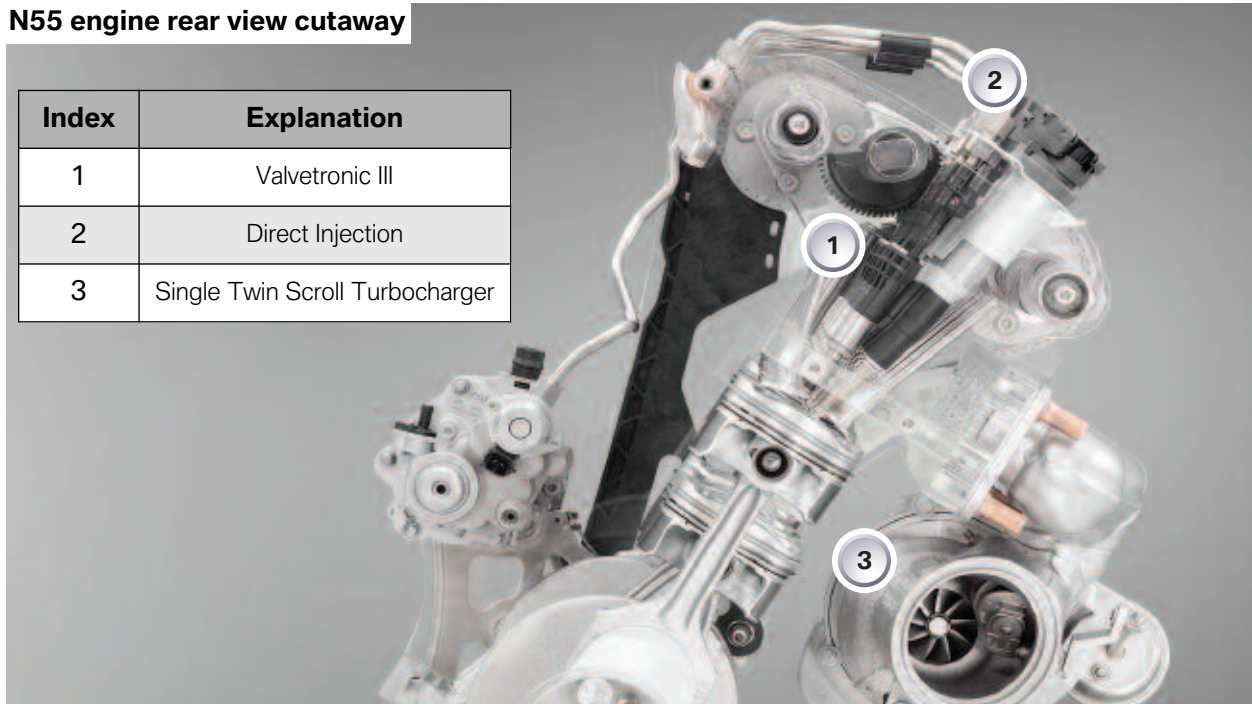
On the N55B30M0 engine the wording “TwinPower Turbo” is used on the engine cover.



N55B30M0 engine with intercooler

N55 engine rear view cutaway

Index	Explanation
1	Valvetronic III
2	Direct Injection
3	Single Twin Scroll Turbocharger



Transmissions (E8x/E9x)

■ Manual Gearboxes

- The K gearbox (GS6-45BZ) is installed in all E92/E93 335i and E82/E88 135i as standard equipment.
- The G gearbox (GS6-53BZ) is installed in all E92/E93 335is and on the Z4 sDrive35i as standard equipment.
- The I gearbox (GS6-17BG) is installed in all E92/E93 128i and the Z4 sDrive30i uses the I Plus gearbox GS6-17PG as standard equipment.

Note: The rear axle ratio on the E93 335i has changed from 3.08 to 3.15 to 1.

■ Automatic Transmissions

The automatic transmission option has changed throughout the E9x and E8x models:

- The Automatic transmission GA6HP19BZ Tü is available in the E90/E91 335i, in the E92/E93 335i, in all E92 xDrive and in the 128i E82/E88 vehicles.
- The DCT double-clutch transmission (GS7D36SG) is installed in the E92/E93 BMW 335is and also in the E82/E88 BMW 135i as the automatic option (there is no automatic transmission in the 135i)

Note The DCT transmission comes equipped with the “Launch Control” feature in all of its applications. (Refer to the vehicle owner’s manual for more information)

E92/E93 BMW 335is

With the US market launch of the E93 and E92 335is models in the spring of 2010, BMW introduced the higher output N54B30T0 engine (Same engine the E89 Z4 sDrive35is) to the 3 Series.

The E92 & E93 335is follow the launch of the Z4 sDrive35is and a long line of previous BMWs that have received an “s” to signify a higher level of sport orientation. BMW began including the “s” denomination in models like the E21 320is in the early 1980’s to denote a sport package or sport edition vehicle. The 3 Series, 5 Series, and X5 have all had the “s” incorporated into their badges at some point in history. These vehicles typically had sport-oriented equipment like sport seats, special wheels, sport steering wheels, sport suspension, exterior aerodynamic components, and performance upgrades.

The 335is Coupe and Convertible can be ordered with either a “G” manual gearbox (GS6-53BZ) or the optional 7 speed double-clutch transmission (GS7D36SG). The engine cooling system has been enhanced with an auxiliary radiator, oil to air heat exchanger and an 850 W fan.

The E92 335is will be introduced later (05/2010) with standard fog lights discontinued. Fog lamps are still available on the E93 335is.



Exterior Features



E92/E93 335is styling features right front view

Index	Explanation
1	Kidney frame and grill in gloss black with front edge of kidney bars in chrome.
2	M sport front fascia without fog lights for additional cooling (coupe).
3	M Sport front fascia with fog lights (convertible).
4	Outside mirrors with gloss black caps.
5	18" alloy wheels Styling 313 in Ferric Grey .
6	M sports side skirts.



E92/E93 335is styling features left rear view

Index	Explanation
1	335is badge
2	Side 335is badge
3	New design rear diffuser in body color
4	Sports exhaust system with improved sound and exhaust tips in black chrome
5	Sports suspension
6	Six Exterior colors

Interior Features



Index	Explanation
1	Instrument cluster with dark grey dials and white needles. (335is badge in rev counter)
2	New - + Gearshift paddles
3	M Sport steering wheel
4	High quality steel pedal pads
5	M Footrest and door sills
6	6 Speed Manual (Standard) or 7 Speed DCT (option)
7	M Sport short shifter with M logo badge
8	Interior trim in aluminum Glacier Dark with 335is badge
9	Sport Seats
10	Anthracite headliner

Powertrain

- 335is models receive the higher output version of the N54 (N54B30T0) twin turbo (as in the Z4 sDrive35is).
- The 7 speed DCT is the only “automatic” available on the 335is, Z4 sDrive35is and 135i (the standard 6 speed manual transmission and the optional 6 speed automatic are still available on other models).
- Sports exhaust system with sportier sound.
- Enhanced engine cooling is used due to increased performance.
- Higher output engine cooling fan.
- Stiffer engine mounts.

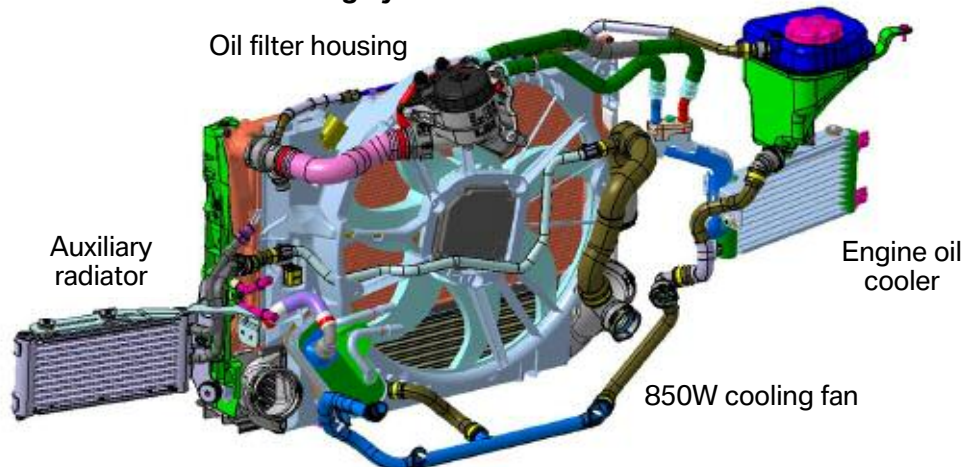
Technical data

	Unit	N54B30T0 in BMW 335is
Design/Cylinders/Valves		In-line/6/4
Displacement	[cm ³]	2979
Bore/Stroke	[mm]	84.0/89.6
Power output at engine speed	SAE HP (rpm)	320 (5900)
Torque at engine speed	lb ft (rpm)	332 (1500)
Compression ratio	[ε]	10.2
Digital Motor Electronics		MSD81
Acceleration 0-60	mph	5.2 DCT (E93)

Cooling System

The 335is E93 and E92 have an enhanced cooling system to handle the extra power. It incorporates an 850W cooling fan, an auxiliary coolant radiator mounted in the driver side lower section of the bumper cover and an oil to air engine oil cooler mounted on the passenger side lower section.

Engine view of the E92/93 335is cooling system



New Model Measures (all E8x/E9x)

The gearshift paddles on the steering wheel of all the automatic models (with Sport Package) are now unidirectional similar to M cars (one touch left -, right +).

Note: See the transmission section of this training material for more information regarding the transmissions use in the different E8x, E9x models.



E93/E92 steering wheel with gearshift paddles. Left: Downshift, right: Upshift.

The automatic climate control panel on the E9x and E88/E82 has been redesigned (as of the 2010 MY).

The heated seat control buttons have been integrated into the control panel faceplate.

The “Residual” (Rest) feature has been removed and the “All” function has been added in its place.

Note: Both the 3 Series and the 1 Series get the Harmon/Kardon sound system.



E9x redesigned climate control panel